PTO/SB/30 (11-04)
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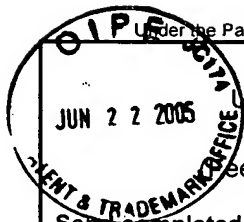U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PETITION FEE
Under 37 CFR 1.17(f), (g) & (h)
TRANSMITTAL
(Fees are subject to annual revision)

Send completed form to: Commissioner for Patents
P.O. Box 1450, Alexandria, VA 22313-1450

Application Number	10/628,467
Filing Date	July 29, 2003
First Named Inventor	N. KAWAMURA, et al
Art Unit	
Examiner Name	
Attorney Docket Number	500.42992X00

Enclosed is a petition filed under 37 CFR §1.102(d) that requires a processing fee (37 CFR 1.17(f), (g), or (h)). Payment of $ 130.00 is enclosed.

This form should be included with the above-mentioned petition and faxed or mailed to the Office using the appropriate Mail Stop (e.g., Mail Stop Petition), if applicable. For transmittal of processing fees under 37 CFR 1.17(i), see form PTO/SB/17i.

Payment of Fees (small entity amounts are NOT available for the petition (fees)

☒ The Commissioner is hereby authorized to charge the following fees to Deposit Account No. 50-1417:

☐ petition fee under 37 CFR 1.17(f), (g) or (h)   ☒ any deficiency of fees and credit of any overpayments
Enclose a duplicative copy of this form for fee processing.

☐ Check in the amount of $ _____ is enclosed.

☒ Payment by credit card (From PTO-2038 or equivalent enclosed). Do not provide credit card information on this form.

Petition Fees under 37 CFR 1.17(f):   Fee $400   Fee Code 1462
For petitions filed under:
§ 1.53(e) - to accord a filing date.
§ 1.57(a) - to according a filing date.
§ 1.182 – for decision on a question not specifically provided for.
§ 1.183 – to suspend the rules.
§ 1.378(e) for reconsideration of decision on petition refusing to accept delayed payment of maintenance fee in an expired patent.
§ 1.741(b) – to accord a filing date to an application under §1.740 for extension of a patent term.

Petition Fees under 37 CFR 1.17(g):   Fee $200   Fee code 1463
For petitions filed under:
§1.12 - for access to an assignment record.
§1.14 - for access to an application.
§1.47 - for filing by other than all the inventors or a person not the inventor.
§1.59 - for expungement of information.
§1.103(a) - to suspend action in an application.
§1.136(b) - for review of a request for extension of time when the provisions of section 1.136(a) are not available.
§1.295 - for review of refusal to publish a statutory invention registration.
§1.296 - to withdraw a request for publication of a statutory invention registration filed on or after the date the notice of intent to publish issued.
§1.377 – for review of decision refusing to accept and record payment of a maintenance fee filed prior to expiration of a patent.
§1.550(c) – for patent owner requests for extension of time in ex parte reexamination proceedings.
§1.956 – for patent owner requests for extension of time in inter partes reexamination proceedings.
§ 5.12 – for expedited handling of a foreign filing license.
§ 5.15 – for changing the scope of a license.
§ 5.25 – for retroactive license.

Petition Fees under 37 CFR 1.17(h):   Fee $130   Fee Code 1464
For petitions filed under:
§1.19(g) – to request documents in a form other than that provided in this part.
§1.84 – for accepting color drawings or photographs.
§1.91 – for entry of a model or exhibit.
§1.102(d) – to make an application special.
§1.138(c) – to expressly abandon an application to avoid publication.
§1.313 – to withdraw an application from issue.
§1.314 – to defer issuance of a patent.

Name (Print/Type)	Carl I. Brundidge	*Registration No. (Attorney/Agent)*	29,621
Signature		*Date*	June 22, 2005

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

500.42992X00

Applicants: N. KAWAMURA, et al

Serial No.:   10/628,467

Filed: July 29, 2003

For: DATABASE PROCESSING METHOD AND SYSTEM USING
              LOG INFORMATION, PROCESSING PROGRAM THEREOF
              AND STORAGE UNIT FOR EXECUTION THEREOF

PETITION TO MAKE SPECIAL
UNDER 37 CFR §1.102(MPEP §708.02)

MS Petition
Commissioner for Patents   June 22, 2005
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicants hereby petition the Commissioner to make the above-

identified application special in accordance with 37 CFR §1.102(d). Pursuant

to MPEP §708.02(VIII), Applicants state the following.

**(A)   This Petition is accompanied by the fee set forth in 37 CFR
§1.17(h).**

The Commissioner is hereby authorized to charge any additional

payment due, or to credit any overpayment, to Deposit Account No. 50-1417.

(B) All claims are directed to a single invention.

If the Office determines that all claims are not directed to a single

invention, Applicant will make an election without traverse as a prerequisite to

the grant of special status.

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(C) A pre-examination search has been conducted.

The search was directed towards a storage system. In particular, the search was directed towards a database processing method, a storage unit for performing processing, database processing system and a database processing program.

According to the present invention the database processing method, storage unit, database processing system and database processing program performs processing by which contents of database processing carried out on a computer are forced to a database in a storage unit. According to the present invention the database processing method, storage unit system, and program includes receiving an access request received from the computer and judging whether the received access is a write request or a read request, judging whether contents to be written are log information indicating contents of database processing carried out on the computer when the received access request is a write request, converting position information indicated in the log information into physical position information in the storage unit with reference to a conversion table indicating correspondence of logical position information recognized in the database processing on the computer to physical position information in the storage unit when the contents to be written are the log information and modifying or updating data of a database area in the storage unit expressed by the obtained physical position information in accordance with contents of the log information.

The search of the above features was conducted in the following areas:

Class	Subclass
707	100-102, 200-205
711	111-114, 120, 151, 152, 160-162
714	5-7, 12, 15, 16, 20

Additionally, a computer database search was conducted on the

USPTO systems EAST and WEST.

(D) The following is a list of the references deemed most closely related to the subject matter encompassed by the claims:

U.S. Patent Number	Inventors
4,751,702	Beier et al
5,758,355	Buchanan
6,173,292	Barber et al
6,226,651	Masuda et al
6,466,951	Birkler et al
6,732,124	Koseki et al
6,850,958	Wakabayashi

U.S. Patent Application Publication No.	Inventor(s)
2002/0103815	Duvillier et al
2002/0107878	Tsuchida et al

A copy of each of these references (as well as other references uncovered

during the search) is enclosed in an accompanying IDS.

(E) It is submitted that the present invention is patentable over the references for the following reasons.

It is submitted that the cited references, whether individually or in

combination, fail to teach or suggest the invention as claimed. In particular,

the cited references, at a minimum, fail to teach or suggest:

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a first feature of the present invention as recited in each of independent claims 1, 2, 7, 9 and 14 including converting position information indicated in the log information into physical position information in the storage unit with reference to a conversion table indicating correspondence of logical position information recognized in the database processing on the computer to physical position information in the storage unit when the contents to be written are the log information and/or:

a second feature of the present invention as recited in independent claims 1, 2, 7, 9 and 14 including modifying (or updating) data of a database area in the storage unit expressed by the obtained physical information in accordance with contents of the log information.

All of the independent claims recite at least one of the above described first or second features of the present invention as recited in the claims.

The references considered most closely related to the claimed invention are briefly discussed below:

Beier (U.S. Patent No. 4,751,702) discloses a system and method for a transaction-oriented database managed by an active processor with management replacement being made by a backup processor tracking and synchronizing its information state from the active processor's log. The method includes the steps of: ascertaining the names and locations of the data set elements in staged storage which are up datable by the active processor, and upon the passing of control from the active (which becomes the old active processor) to the other processor, logging the ascertained names and locations; ascertaining whether the degraded active processor ceases to perform updates to staged storage; upon the first reference to each

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data set element in staged storage by the other processor (which becomes the new active processor), creating an image by copying the referenced element to a buffer, diverting subsequent references from staged storage to the image in the buffer, logging each update to the image in the buffer, the steps of copying, diverting, and logging being repeated until the old active processor ceases to perform updates to staged storage; and then writing the buffer images back to staged storage. (See, e.g., Abstract and column 1, line 42, through column 2, line 2).

However, unlike the present invention, Beier does not teach or suggest converting position information indicated in log information into physical position information in a storage unit, with reference to a conversion table indicating correspondence of logical position information recognized in a database processing on a computer to physical position information in the storage unit, when the contents to be written are the log information. More particularly, Beier fails to teach or suggest at least one of the above described first and second features of the present invention recited in each of independent claims 1, 2, 7, 9 and 14.

Buchanan (U.S. Patent No. 5,758,355) discloses a distributed relational database in which a client computer maintains a database that is a subset of a server database. The system includes a storage medium encoded for use in synchronization of a server database, which includes a plurality of tables and which is accessible on a server computer system, and a client database, which is accessible on a client computer system and which includes a subset of the tables in the server database. The storage medium comprises a first distribution point table in the server database which has the property that

modification of the first distribution point table may influence distribution of information from the server database to the client database during a synchronization of the server database and the client database. The first distribution table corresponds to the first distribution point table which is separate from the server database application tables and which includes identification information that identifies occurrences of information within the server database that may require distribution to the client database during a synchronization of the server database and the client database. The system also includes a first extract program which references the identification information in the first distribution table and corresponding information in the first distribution point table to identify information in the first distribution point table to be distributed to the client database during a synchronization of the server database and the client database. (See, e.g., Abstract and column 3, lines 29-54).

However, unlike the present invention, Buchanan does not teach or suggest converting position information indicated in log information into physical position information in a storage unit, with reference to a conversion table indicating correspondence of logical position information recognized in a database processing on a computer to physical position information in the storage unit, when the contents to be written are the log information. More particularly, Buchanan fails to teach or suggest at least one of the above described first and second features of the present invention recited in each of independent claims 1, 2, 7, 9 and 14.

Barber (U.S. Patent No. 6,173,292) discloses a method and system for using write-ahead logging and file caching in a transaction control system to

guarantee the integrity of the database management system. The database

management system manages one or more databases, where each of the

databases contains one or more objects. The database management system

also supports a file cache for those databases. A transaction control system

provides transaction control for the databases managed by the database

management system, where the transaction control system monitors and

controls the file cache to ensure that modified objects are stored on a data

storage device in manner that reflects an accurate status for a log file

maintained by the transaction control system. The system provides write-

ahead logging for database management systems or file systems that support

file caching. The system also provides transaction control for databases

wherein the locations of objects within those databases migrate over time.

(See, e.g., Abstract, and column 1, lines 35-59).

However, unlike the present invention, Barber does not teach or

suggest converting position information indicated in log information into

physical position information in a storage unit, with reference to a conversion

table indicating correspondence of logical position information recognized in a

database processing on a computer to physical position information in the

storage unit, when the contents to be written are the log information. More

particularly, Barber fails to teach or suggest at least one of the above

described first and second features of the present invention recited in each of

independent claims 1, 2, 7, 9 and 14.

Masuda (U.S. Patent No. 6,226,651) discloses a method and system

for maintaining and employing shadow copies of a database for remote site

disaster recovery. The system includes an integrated DBMS solution to

recover a primary site database based upon the maintenance of a shadow copy of the primary site's database data and logs at a remote site. Both the primary site DBMS and the remote site DBMS may support write-ahead logging protocol in which log records are written to a log data set before database updates are entered into the remote site storage. The remote site serves at least two functions: as a "tracker" DBMS and as a "take-over" DBMS. The tracker function maintains a shadow copy of the primary site's database data sets at the remote site. The multi-phased take-over function uses the shadow copies to update the remote site database data sets and substitutes them for primary site database data sets made unavailable by an unplanned disaster at the primary site. (See, e.g., Abstract and column 2, line 61, through column 3, line 63).

However, unlike the present invention, Masuda does not teach or suggest converting position information indicated in log information into physical position information in a storage unit, with reference to a conversion table indicating correspondence of logical position information recognized in a database processing on a computer to physical position information in the storage unit, when the contents to be written are the log information. More particularly, Masuda fails to teach or suggest at least one of the above described first and second features of the present invention recited in each of independent claims 1, 2, 7, 9 and 14.

Birkler (U.S. Patent No. 6,466,951) discloses a database system that has at least two host processing devices with respective host databases and a remote processing device with a remote database, where the contents of the remote database are synchronized with the host databases, so that

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changes made to any of the databases are propagated to the other databases. The host databases and the remote database store a plurality of database items. A synchronization engine is provided in each host processing device for synchronizing its host database with the remote database. A first log file contains entries that represent changes made to the remote database, including additions and modifications of items in the remote database as well as deletions of items from the remote database in order to increase its free storage space available for storing new items. A second log file contains entries that represent deletions from the remote database upon respective deletions in either of the host databases. The synchronization engine deletes items in its host database in accordance with the entries in the second log file but not in the first log file. (See, e.g., Abstract and column 2, lines 25-49).

However, unlike the present invention, Birkler does not teach or suggest converting position information indicated in log information into physical position information in a storage unit, with reference to a conversion table indicating correspondence of logical position information recognized in a database processing on a computer to physical position information in the storage unit, when the contents to be written are the log information. More particularly, Birkler fails to teach or suggest at least one of the above described first and second features of the present invention recited in each of independent claims 1, 2, 7, 9 and 14.

Koseki (U.S. Patent No. 6,732,124) discloses a data processing system which can recover from system failures by using log records to restore the consistency of its file system structure, as well as a computer-readable

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medium storing-a program providing such failure recovery functions. The data processing system stores log records for repairing a file system when its consistency is lost. When there is a transaction attempting to update metadata stored in metadata volumes, a metadata loading unit reads the requested metadata objects out of the volumes and loads them to a metadata cache. At that time, a metadata manager updates its internal database to record from which metadata volume each metadata object has been fetched. Each time the transaction updates a metadata object in the cache, a log collection unit collects a copy of the updated metadata object, together with a volume ID which indicates its home metadata volume. The collected data is temporarily stored in a log buffer, and finally saved into a log volume by a log writing unit. (See, e.g., Abstract and column 5, lines 1-46).

However, unlike the present invention, Koseki does not teach or suggest converting position information indicated in log information into physical position information in a storage unit, with reference to a conversion table indicating correspondence of logical position information recognized in a database processing on a computer to physical position information in the storage unit, when the contents to be written are the log information. More particularly, Koseki fails to teach or suggest at least one of the above described first and second features of the present invention recited in each of independent claims 1, 2, 7, 9 and 14.

Wakabayashi (U.S. Patent No. 6,850,958) discloses a backup system including a database apparatus having a plurality of databases and a backup apparatus for providing a backup of information stored in the database apparatus. The database apparatus includes the ability to generate update

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information indicating updates of the databases. The system is able to generate interrelation information indicating an interrelation between the update information for a certain database and the update information for other databases. The system is also able to transmit the update information and the interrelation information. The backup apparatus is able to receive the update information and the interrelation information that is transmitted, and the backup databases hold backups of the contents of the databases. The system looks up the interrelation information received by the receiving apparatus to determine the interrelation of each update information. The backup databases are updated based on the update information whose interrelation is verified by the interrelation determining process. (See, e.g., Abstract and column 3, line 48, through column 4, line 36).

However, unlike the present invention, Wakabayashi does not teach or suggest converting position information indicated in log information into physical position information in a storage unit, with reference to a conversion table indicating correspondence of logical position information recognized in a database processing on a computer to physical position information in the storage unit, when the contents to be written are the log information. More particularly, Wakabayashi fails to teach or suggest at least one of the above described first and second features of the present invention recited in each of independent claims 1, 2, 7, 9 and 14.

Duvillier (U.S. Patent Application Publication No. 2002/0103815) discloses a method and computer program for performing a write transaction or other type of data modifying transaction of a data object to a database. An entry for a data object containing version data for the data object is created

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and maintained in an object table. The entry for the data object is written or saved to a non-persistent memory, such as a cache memory at a particular non-persistent memory address. The write operation is then committed by saving the data object in a persistent memory area at a persistent memory area address. With respect to this write transaction, at least one inconsistent data page is identified in the non-persistent memory. This inconsistent data page is then written to the persistent memory area. The invention also discloses a commit transaction or similar command received from an application. One or more data pages to be written to a persistent memory from a non-persistent memory are selected. An address of a selected data page is written to a system write queue buffer. The selected data page is then retrieved based on addresses in the system write queue buffer, and then stored in a disk write buffer of a writer thread. It is then determined whether to write the selected data page to the persistent memory. Finally, the address of the selected data page is adjusted. (See, e.g., Abstract and paragraphs 16-18).

However, unlike the present invention, Duvillier does not teach or suggest converting position information indicated in log information into physical position information in a storage unit, with reference to a conversion table indicating correspondence of logical position information recognized in a database processing on a computer to physical position information in the storage unit, when the contents to be written are the log information. More particularly, Duvillier fails to teach or suggest at least one of the above described first and second features of the present invention recited in each of independent claims 1, 2, 7, 9 and 14.

Tsuchida (U.S. Patent Application Publication No. 2002/0107878) discloses a method and system for managing multiple database storage units to duplicate the database without interrupting the on-going operations involving the access to the database storage units. The system manages a database in multiple database storage units, and the database is duplicated for redundancy. The system maintains the database redundancy for security. The system enables the maintenance and reorganization of the database storage units without interrupting the on-going operations involving the access to the database storage units. The non-stop ongoing database access is available by allocating a pair of a main storage unit and an intermediate storage unit that maintains the substantially identical data. During certain predetermined operations, the main storage unit is being dedicating to the on-going transactions while the intermediate database storage unit is manipulated to contain data that corresponds to a specified time. For example, the content of the intermediate storage is subsequently copied or used to update another database. When the duplication or incorporation is completed, the intermediate storage unit is updated for the transactions that have taken place during the operations to be synchronized with the main storage unit. (See, e.g., Abstract and paragraphs 7-9, 45 and 46).

However, unlike the present invention, Tsuchida does not teach or suggest converting position information indicated in log information into physical position information in a storage unit, with reference to a conversion table indicating correspondence of logical position information recognized in a database processing on a computer to physical position information in the storage unit, when the contents to be written are the log information. More

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particularly, Tsuchida fails to teach or suggest at least one of the above described first and second features of the present invention recited in each of independent claims 1, 2, 7, 9 and 14.

Therefore, since the references fail to teach or suggest one or more of the first and second features of the present invention as recited in each of independent claims 1, 2, 7, 9 and 14, it is submitted that all of the claims are patentable over the cited references whether taken individually or in combination with each other.

F.   Conclusion

Applicant has conducted what it believes to be a reasonable search, but makes no representation that "better" or more relevant prior art does not exist. The United States Patent and Trademark Office is urged to conduct its own complete search of the prior art, and to thoroughly examine this application in view of the prior art cited herein and any other prior art that the United States Patent and Trademark Office may locate in its own independent search. Further, while Applicant has identified in good faith certain portions of each of the references listed herein in order to provide the requisite detailed discussion of how the claimed subject matter is patentable over the references, the United States Patent and Trademark Office should not limit its review to the identified portions but rather, is urged to review and consider the entirety of each reference, and not to rely solely on the identified portions when examining this application.

In view of the foregoing, Applicant requests that this Petition to Make Special be granted and that the application undergo the accelerated examination procedure set forth in MPEP 708.02 VIII.

G. **Fee (37 C.F.R. 1.17(i))**

The fee required by 37 C.F.R. § 1.17(i) is to be paid by:

[X]   the Credit Card Payment Form (attached) for $130.00.

[   ]   charging Account _____ the sum of $130.00.

A duplicate of this petition is attached.

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C., Deposit Account No. 50-1417 (500.42992X00).

Respectfully submitted,

MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.

_____

Carl I. Brundidge
Reg. No. 29,621

CIB/jdc
(703) 684-1120